DEPARTMENT OF PERMITTING, ENVIRONMENT, AND REGULATORY AFFAIRS (PERA)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
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Sika Sarnafil Inc.
100 Dan Road
Canton, MA 02021

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami–Dade County PERA – Product Control Section to be used in Miami–Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami–Dade County Product Control Section (In Miami–Dade County) and/or the AHJ (in areas other than Miami–Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. PERA reserves the right to revoke this acceptance, if it is determined by Miami–Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Sika Sarnafil PVC Single Ply Roofing over Concrete Deck.

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state, and following statement: "Miami–Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/ or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami–Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA renews and revises NOA No. 11-0526.06 and consists of pages 1 through 58.
The submitted documentation was reviewed by Jorge L. Acebo.

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Single Ply
Material:	PVC
Deck Type:	Concrete
Maximum Design Pressure	-615 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
G410	Various	ASTM D 4434	Fiberglass reinforced PVC roofing membrane.
G410 Felt	Various	ASTM D 4434	Fiberglass reinforced PVC roofing membrane with a non-woven felt backing.
G410 PS	Various	ASTM D 4434	Fiberglass reinforced PVC roofing membrane with a peel & stick self-adhering backing.
S327	Various	ASTM D 4434	Polyester reinforced PVC roofing membrane.
S327 Felt	Various	ASTM D 4434	Polyester reinforced PVC roofing membrane.
Sikaplan 45	45 mil thick	ASTM D 4434	White polyester reinforced PVC roofing membrane.
G459	Various	ASTM D 4434	Fiberglass reinforced PVC Alloy asphalt compatible flashing membrane.
Sarnatape	Various		Air flow barrier tape
Sarnacol 2170	5 gallons		Solvent based bonding adhesive.
Sarnacol 2121	5 gallons		Water based bonding adhesive.
Sarnacol 2163			Insulation adhesive.
Sarnacol 2164			Insulation adhesive.
Sarnacorner	5”, 6”, 8.5”		Prefabricated inside and outside corner flashing.
Sarnaflash	18” x 40”		Prefabricated expansion joints.
Sarnatred	3.25’ x 32.8’		PVC walkway protection sheet.
SarnaWalkways	Various		PVC walkway protection sheet.
Sarnastack	Various		Prefabricated cone flashing.
Sarnadrain RAC	Various		Aluminum drain insert.
Sarnaclad	Various		Heat weldable PVC/galvanized steel flashing

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Sarnatherm	Isocyanurate Insulation	Sarnafil, Inc.
Sarnatherm-25 PSI	Polyisocyanurate insulation board.	Sarnafil, Inc.
ACFoam Composite	Isocyanurate Insulation with perlite facer	Atlas Roofing Corp.
ACFoam II, ACFoam III	Isocyanurate Insulation	Atlas Roofing Corp.
ACFoam Supreme	Isocyanurate Insulation	Atlas Roofing Corp.
DensDeck, DensDeck Prime, DensDeck DuraGuard	Silicon treated gypsum	G-P Products
ENRGY 3, JM ISO 3	Isocyanurate Insulation	Johns Manville
ENRGY 3 Plus	Isocyanurate Insulation with wood fiberboard facer	Johns Manville
ENRGY 3 PSI-25	Isocyanurate Insulation	Johns Manville
EPS	Type IX Expanded polystyrene with a minimum density of 1.8 pcf	Generic
High Density Wood Fiberboard	Wood fiber insulation	Generic
H-Shield, H-Shield CG, H-Shield-WF	Isocyanurate Insulation	Hunter Panels
ISO 95+ GL	Isocyanurate Insulation	Firestone
Multi-Max 3, Multi-Max FA-3	Isocyanurate Insulation	Rmax, Inc.
Perlite Insulation Board	Perlite Insulation	Generic
Thermaroof-3	Isocyanurate Insulation	Rmax, Inc.
Thermaroof Composite-3	Isocyanurate Insulation with perlite facer	Rmax, Inc.
Type X Gypsum	Gypsum Wallboard	Generic
XPS	Type IV Extruded polystyrene with a minimum density of 1.6 pcf	Generic
Structodek HD Fiberboard	High Density Wood Fiber insulation board.	Blue Ridge Fiberboard

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	OMG Fasteners	Insulation and membrane fastener	Various	OMG, Inc.
2.	OMG Roofgrip Fasteners	Insulation and membrane fastener	Various	OMG, Inc.
3.	CD-10 Fastener	Insulation and membrane fastener	Various	OMG, Inc.
4.	3" Ribbed Galvalume Plate	Galvalume steel stress plate	3" round	OMG, Inc.
5.	OMG 3" Galvalume Steel Plate	Galvalume coated steel stress plate	3" round	OMG, Inc.
6.	Dekfast Fasteners	Insulation and membrane fasteners	Various	SFS Intec, Inc.
7.	Dekfast Galvalume Steel 3" Round Plate	Galvalume AZ50 stress plate	3" round	SFS Intec, Inc.
8.	Sarnafastener	Insulation and membrane fastener	Various	Sarnafil, Inc.
9.	Sarnadisc	Membrane fastening stress plate.	2" round	Sarnafil, Inc.
10.	Sarnaplate	Insulation fastening plate.	3" round	Sarnafil, Inc.
11.	Sarnarail Polymer Batten Strip	Polymer Batten Bar	1" x 250'	Sarnafil, Inc.
12.	Sarnafastener-XP	Membrane and insulation fastener.	Various	Sarnafil, Inc.
13.	Sarnadisc-XPN Plate	Membrane and insulation fastening plate.	1.5" x 3.75"	Sarnafil, Inc.
14.	Sarnafastener-Concrete	Insulation and membrane fastener	Various	Sarnafil, Inc.
15.	Sarnabars	Galvanized or stainless steel membrane fastening bar.	Various	Sarnafil, Inc.
16.	OMG 2" Round Plate	Membrane fastening stress plate.	2" round	OMG, Inc.
17.	OMG Heavy Duty	Insulation fastener for steel, wood and concrete decks	Various	OMG, Inc.

EVIDENCE SUBMITTED:

Test Agency	Test Identifier	Description	Date
Celotex Technical Center	MTS Job No. 258215	TAS 114	09/09/97
Exterior Research & Design	02767.02.06	TAS 114	02/08/06
Factory Mutual Research Corporation	0X3A3.AM	4470	07/31/94
	0P6A6.AM	4470	03/03/94
	2X2A5.AM	4470	07/31/94
	0B9A0.AM	4470	10/22/96
	1Z5A6.AM	4470	07/18/97
	4B3A2.AM	4470	06/19/97
	3001396	4470	05/28/99
	3012964	4470	06/11/02
	3015643	4470	12/06/02
	3016201	4470	01/28/03
	3006785	4470	05/06/04
	3017292	4470	09/03/04
	3021131	4470	07/07/05
	3024229	4470	11/16/05
	3028309	4470	03/30/07
Underwriters Laboratories, Inc.	R8992	Fire Classification	1994

APPROVED ASSEMBLIES

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(1): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved vapor retarder may be installed over the deck.

(Optional) Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, ACFoam III, Multi-Max FA-3, JM ISO 3, ISO 95+GL, Sarnatherm, H-Shield		
Minimum 1.5" thick	N/A	N/A
DensDeck, DensDeck Prime		
Minimum 0.5" thick	N/A	N/A

Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, ACFoam III, Multi-Max FA-3, Sarnatherm		
Tapered	N/A	N/A

Note: All insulation shall be adhered to the deck in 3-3.5" wide beads spaced 12" o.c. of TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or with Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Or

Sarnafil G410 or S327 adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and .5 gal/sq. to the back of the membrane.

Maximum Design Pressure: -45.0 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank

System Type A(2): One or more layers of insulation fully adhered with approved adhesive.

All General and System Limitations apply.

Vapor Retarder: (Optional) Any UL or FM approved vapor barrier approved for use with hot asphalt may be applied to the deck or perlite base layer.

One or more layers of the following insulations:

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
H-Shield CG Minimum 1.5" thick	N/A	N/A
DensDeck DuraGuard Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 25 lbs/sq. or in 0.75" wide beads of Olybond 500 or Spot Shot spaced 12" o.c. lbs/100 ft^2.

Membrane: Sarnafil G410 PS, self-adhered to insulation and installed with a 3" wide heat welded seam. Membrane is rolled into insulation with a weighted roller.

Maximum Design Pressure: -75.0 psf. (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(3): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved asphaltic vapor retarder may be installed over the deck or the base layer of insulation

One or more layers of the following insulations:

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, ACFoam III, ENRGY 3, Sarnatherm		
Minimum 1.5" thick	N/A	N/A
H-Shield (Requires top layer of approved insulation)		
Minimum 1.5" thick	N/A	N/A
(Optional) Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime		
Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Millennium Pourable Foam Insulation Adhesive or Sarnacol 2164. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 adhesive. Adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 0.5 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure: -75.0 psf (with DensDeck or DensDeck Prime) (See General Limitation #9)
-127.5 psf (Polyisocyanurate only) (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(4): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved asphaltic vapor retarder may be installed over the deck or the base layer of insulation

One or more layers of the following insulations:

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, ACFoam III, ENRGY 3, Sarnatherm		
Minimum 1.5" thick	N/A	N/A
H-Shield (Requires top layer of approved insulation)		
Minimum 1.5" thick	N/A	N/A
(Optional) Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime		
Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Millennium Pourable Foam Insulation Adhesive or Sarnacol 2164. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure: -75.0 psf (with DensDeck or DensDeck Prime) (See General Limitation #9)
-135.0 psf (Polyisocyanurate only) (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(5): One or more layers of insulation adhered with approved adhesive

All General and System Limitations apply.

Vapor Retarder (Optional):	Hot-applied:	Optional hot asphalt-applied base and/or ply sheets approved for use with roof cover followed by an additional asphalt-applied sheet.
	Self-Adhered:	Optional self-adhered base membrane approved for use with roof cover followed by an additional self-adhered sheet.
	Torch-applied:	Optional hot asphalt-applied base and/or ply sheets or optional torch-applied base membrane approved for use with roof cover followed by an additional torch-applied sheet.

(Optional) Insulation Base Layer:	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, Multi-Max FA-3, H-Shield, ENRGY 3, Sarnatherm Minimum: 1.5" thick	N/A	N/A

Insulation Top Layer:	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, Multi-Max FA-3, H-Shield, ENRGY 3, Sarnatherm Tapered	N/A	N/A

Note: All insulation shall be adhered to the deck or vapor barrier in TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in continuous 3-inch ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or with Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Or

Sarnafil G410 or S327 adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and .5 gal/sq. to the back of the membrane.

Maximum Design Pressure: -117.0 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(6): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

One or more layers of the following insulations:

(Optional) Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
Approved EPS Minimum 2.0" thick	N/A	N/A
Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
Approved High Density Wood Fiberboard Minimum 1.0" thick	N/A	N/A
DensDeck, DensDeck Prime Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ¾" – 1" wide beads 12" o.c. of OlyBond 500 or Spot Shot Adhesive Fastener. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee.

Or

Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 adhesive. Adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 0.5 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure: -120.0 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank

System Type A(7): One or more layers of insulation fully adhered with approved asphalt.

All General and System Limitations apply.

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II Minimum 1.3" thick or tapered	N/A	N/A
Sarnatherm, ENRGY 3, ENRGY 3 Plus, ENRGY 3 PSI-25, H-Shield Minimum 1.4" thick or tapered	N/A	N/A
H-Shield-WF Minimum 1.9" thick or tapered	N/A	N/A
(Optional) Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime Minimum ¼" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 adhesive. Adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 0.5 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure: -127.5 psf. (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(8): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ENRGY 3, Sarnatherm, H-Shield Minimum 1.5" thick	N/A	N/A

Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ¾" – 1" wide beads 12" o.c. of OlyBond 500 or Spot Shot Adhesive Fastener. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Or

Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 adhesive. Adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 0.5 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure: -127.5 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(9): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved asphaltic vapor retarder may be installed over the deck or the base layer of insulation

One or more layers of the following insulations:

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
ACFoam II, Multi-Max-3, ENRGY 3, H-Shield, ISO 95+GL, Sarnatherm		
Minimum 1.5" thick	N/A	N/A

Top Insulation Layer	Fastener Type	Fastener Density/ft^2
Approved High Density Wood Fiber		
Minimum 0.5" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Millennium One Step Foamable Adhesive, Sarnacol 2163 or Millennium Pourable Foam Insulation Adhesive or Sarnacol 2164. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee.

Maximum Design Pressure: -127.5 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(10): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved asphaltic vapor retarder may be installed over the deck or the base layer of insulation

One or more layers of the following insulations:

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
ACFoam II, ACFoam III, ENRGY 3, Sarnatherm, H-Shield		
Minimum 1.5" thick	N/A	N/A

Top Insulation Layer	Fastener Type	Fastener Density/ft^2
Approved High Density Wood Fiber		
Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Millennium Pourable Foam Insulation Adhesive or Sarnacol 2164. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee.

Maximum Design Pressure: -127.5 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(11): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved asphaltic vapor retarder may be installed over the deck or the base layer of insulation

One or more layers of the following insulations:

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
ACFoam II, Multi-Max-3, ENRGY 3, H-Shield, Sarnatherm		
Minimum 1.5" thick	N/A	N/A

Top Insulation Layer	Fastener Type	Fastener Density/ft^2
DensDeck, DensDeck Prime		
Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Millennium Pourable Foam Insulation Adhesive or Sarnacol 2164. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 adhesive. Adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 0.5 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure = -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure = -135.0 psf (See General Limitation #9)

Maximum Design Pressure: See membrane attachment above.

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(12): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, H-Shield, Sarnatherm Minimum 1.5" thick	N/A	N/A
DensDeck, DensDeck Prime Minimum 0.25" thick	N/A	N/A

Top Insulation Layer (Optional)	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ¾" – 1" wide beads 12" o.c. of OlyBond 500 or Spot Shot Adhesive Fastener. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 adhesive. Adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 0.5 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure -150.0 psf (See General Limitation #9)

Maximum Design Pressure: See membrane attachment above

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(13): One or more layers of insulation adhered with approved adhesive

All General and System Limitations apply.

Vapor Retarder: Torch-applied: Optional torch-applied base membrane approved for use with roof cover followed by an additional torch-applied sheet.

Asphalt-applied: Optional hot asphalt-applied base and/or ply sheets approved for use with roof cover.

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, Multi-Max FA-3, H-Shield, ENRGY 3, Sarnatherm		
Minimum: 1.5" thick	N/A	N/A

(Optional) Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, Multi-Max FA-3, H-Shield, ENRGY 3, Sarnatherm		
Minimum: 1.5 " thick	N/A	N/A

Note: All insulation shall be adhered to the deck or vapor barrier in TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in continuous 3-inch ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 or S327 adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and .5 gal/sq. to the back of the membrane.

Maximum Design Pressure -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or with Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure -169.0 psf (See General Limitation #9)

Maximum Design Pressure: See Membrane Options

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(14): One or more layers of insulation adhered with approved adhesive

All General and System Limitations apply.

Vapor Retarder: Torch-applied: Optional torch-applied base membrane approved for use with roof cover followed by an approved torch-applied sheet.

Asphalt-applied: Optional hot asphalt-applied base and/or ply sheets approved for use with roof cover.

(Optional) Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, Multi-Max FA-3, H-Shield, ENRGY 3, Sarnartherm or Approved XPS or EPS Insulation Boards		
Minimum: 1.5" thick	N/A	N/A

Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime		
Minimum: 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck or vapor barrier in TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in continuous 3-inch ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 or S327 adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and .5 gal/sq. to the back of the membrane.

Maximum Design Pressure -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or with Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure -169.0 psf (See General Limitation #9)

Maximum Design Pressure: See Membrane Options Above

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(15): One or more layers of insulation adhered with approved adhesive

All General and System Limitations apply.

Vapor Retarder (Optional):	Hot-applied:	Optional hot asphalt-applied base and/or ply sheets approved for use with roof cover followed by an additional asphalt-applied sheet.
	Self-Adhered:	Optional self-adhered base membrane approved for use with roof cover followed by an additional self-adhered sheet.

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
Approved XPS or EPS Insulation Boards Minimum: 1.5" thick	N/A	N/A

Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime Minimum: 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck or vapor barrier in TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in continuous 3-inch ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 or S327 adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and .5 gal/sq. to the back of the membrane.

Maximum Design Pressure -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or with Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure -180.0 psf (See General Limitation #9)

Maximum Design Pressure: See Membrane Options Above

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(16): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
ACFoam II, H-Shield, ENRGY 3, ISO 95+GL, Sarnatherm Minimum 1.0" thick	N/A	N/A
DensDeck, DensDeck Prime Minimum 0.25" thick	N/A	N/A

Top Insulation Layer	Fastener Type	Fastener Density/ft^2
DensDeck, DensDeck Prime Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in full coating of OlyBond Adhesive Fastener at a rate of 1 gal/sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 adhesive. Adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 0.5 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure = -202.5 psf (See General Limitation #9)

Maximum Design Pressure: See membrane attachment above

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(17): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
Approved XPS Insulation Boards Minimum 1.0" thick	N/A	N/A

Top Insulation Layer	Fastener Type	Fastener Density/ft^2
DensDeck, DensDeck Prime Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ¾" – 1" wide beads 12" o.c. of OlyBond 500 or Spot Shot Adhesive Fastener. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 adhesive. Adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 0.5 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure -202.5 psf (See General Limitation #9)

Maximum Design Pressure: See membrane attachment above.

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(18): One or more layers of insulation adhered with approved adhesive

All General and System Limitations apply.

Vapor Retarder (Optional):	Hot-applied:	Optional hot asphalt-applied base and/or ply sheets approved for use with roof cover followed by an additional asphalt-applied sheet.
	Self-Adhered:	Optional self-adhered base membrane approved for use with roof cover followed by an additional self-adhered sheet

(Optional) Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, Multi-Max FA-3, H-Shield, ENRGY 3, Sarnatherm or minimum 2.0 pcf Approved XPS or EPS Insulation Boards		
Minimum: 1.5" thick	N/A	N/A

Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime		
Minimum: 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck or vapor barrier in TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in continuous 3-inch ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 or S327 adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and .5 gal/sq. to the back of the membrane.

Maximum Design Pressure -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or with Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure -202.5 psf (See General Limitation #9)

Maximum Design Pressure: See Membrane Options Above

Membrane Type: Single Ply, Thermoplastic

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(19): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved vapor retarder may be installed over the deck.

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
ACFoam II, ACFoam III, Multi-Max FA-3, JM ISO 1, ISO 95+GL , Sarnatherm		
Minimum 1.5" thick	N/A	N/A
DensDeck, DensDeck Prime		
Minimum 0.5" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in 3-3.5" wide beads spaced 12" o.c. of TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 or S327 adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and .5 gal/sq. to the back of the membrane.

Maximum Design Pressure -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or with Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure -202.5 psf (See General Limitation #9)

Maximum Design Pressure: See Membrane Options above.

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(20): One or more layers of insulation adhered with approved adhesive

All General and System Limitations apply.

Vapor Retarder (Optional):	Hot-applied:	Optional hot asphalt-applied base and/or ply sheets approved for use with roof cover followed by an additional asphalt-applied sheet.
	Self-Adhered:	Optional self-adhered base membrane approved for use with roof cover followed by an additional self-adhered sheet.

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, Sarnatherm Minimum: 1.5" thick	N/A	N/A
H-Shield (Requires top layer of approved insulation) Minimum: 1.5" thick	N/A	N/A

(Optional) Top Insulation Layer

	Fastener Type	**Fastener Density/ft^2**
ACFoam II, Sarnatherm Minimum: 1.5 " thick	N/A	N/A

Note: All insulation shall be adhered to the deck or vapor barrier in TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in continuous 3-inch ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 or S327 adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and 0.5 gal/sq. to the back of the membrane.
Maximum Design Pressure -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or with Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.
Maximum Design Pressure -210.0 psf (See General Limitation # 9)

Maximum Design Pressure: See Membrane Options Above

Membrane Type: Single Ply, Thermoplastic

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(21): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
ACFoam II, ACFoam III, ISO 95+GL, Sarnatherm Minimum 1.5" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in 3-3.5" wide beads spaced 12" o.c. of TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 or S327 adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and 0.5 gal/sq. to the back of the membrane.
Maximum Design Pressure -127.5 psf (See General Limitation #9)

Or
Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or with Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.
Maximum Design Pressure -210.0 psf (See General Limitation # 9)

Maximum Design Pressure: See Membrane Option above.

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(22): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved asphaltic vapor retarder may be installed over the deck or the base layer of insulation

One or more layers of the following insulations:

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, Multi-Max-3, ENRGY 3, H-Shield, Sarnatherm		
Minimum 1.5" thick	N/A	N/A
DensDeck, DensDeck Prime		
Minimum 0.25" thick	N/A	N/A

(Optional) Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime		
Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Millennium One Step Foamable Adhesive or Sarnacol 2163. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 adhesive. Adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 0.5 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure = -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure = -157.5 psf (with Asphaltic vapor retarder) (See General Limitation #9)

Maximum Design Pressure = -225.0 psf (no vapor retarder) (See General Limitation #9)

Maximum Design Pressure: See membrane attachment above.

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(23): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved asphaltic vapor retarder may be installed over the deck or the base layer of insulation

One or more layers of the following insulations:

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
ENRGY 3, Sarnatherm		
Minimum 1.5" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in full coverage of Millennium Pourable Foam Insulation Adhesive or Sarnacol 2164 at a rate of 1 gal/sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 adhesive. Adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 0.5 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure = -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure = -225.0 psf (See General Limitation #9)

Maximum Design Pressure: See membrane attachment above.

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(24): One or more layers of insulation adhered with approved adhesive

All General and System Limitations apply.

Vapor Retarder (Optional):	Hot-applied:	Optional hot asphalt-applied base and/or ply sheets approved for use with roof cover followed by an additional asphalt-applied sheet.
	Self-Adhered:	Optional self-adhered base membrane approved for use with roof cover followed by an additional self-adhered sheet

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
Multi-Max FA-3, H-Shield, ENRGY 3, Sarnatherm		
Minimum: 1.5" thick	N/A	N/A

(Optional) Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
Multi-Max FA-3, H-Shield, ENRGY 3, Sarnatherm		
Minimum: 1.5 " thick	N/A	N/A

Note: All insulation shall be adhered to the deck or vapor barrier in TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in continuous 3-inch ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 or S327 adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and .5 gal/sq. to the back of the membrane.

Maximum Design Pressure -127.5 psf (See General Limitation #9)

Or

Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or with Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure -225.0 psf (See General Limitation #9)

Maximum Design Pressure: See Membrane Options Above

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(25): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved asphaltic vapor retarder may be installed over the deck or the base layer of insulation

One or more layers of the following insulations:

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
Approved EPS Insulation Boards		
Minimum 1.0" thick	N/A	N/A
Approved XPS Insulation Boards		
Minimum 1.0" thick	N/A	N/A

Top Insulation Layer	Fastener Type	Fastener Density/ft^2
Approved High Density Wood Fiber		
Minimum 0.5" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Millennium Pourable Foam Insulation Adhesive or Sarnacol 2164. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee.

Maximum Design Pressure: -150.0 psf (with EPS) (See General Limitation #9)
-162.5 psf (with XPS) (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank

System Type A(26): One or more layers of insulation fully adhered with approved asphalt.

All General and System Limitations apply.

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
ACFoam II Minimum 1.3" thick or tapered	N/A	N/A
Sarnatherm, ENRGY-3, ENRGY-3 Plus, ENRGY 3 PSI-25, H-Shield Minimum 1.4" thick or tapered	N/A	N/A
H-Shield-WF Minimum 1.9" thick or tapered	N/A	N/A
Approved High Density Roof Fiberboard Minimum 1" thick or tapered	N/A	N/A

Top Insulation Layer	Fastener Type	Fastener Density/ft^2
Approved High Density Roof Fiberboard Minimum 1" thick or tapered	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee.

Maximum Design Pressure: -162.5 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank

System Type A(27): One or more layers of insulation fully adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of the following.

(Optional) Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
Approved EPS Insulation Boards Minimum 1.0" thick, min 1.0 pcf	N/A	N/A
Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
Approved High Density Fiberboard Minimum 0.5" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in full coating of OlyBond Adhesive Fastener at a rate of 1 gal/sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee.

Maximum Design Pressure: -162.5 psf. (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(28): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
ISO 95+ GL Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
Approved High Density Wood Fiberboard Minimum 0.5" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ¾" – 1" wide beads 12" o.c. of OlyBond 500 or Spot Shot Adhesive Fastener. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee.

Maximum Design Pressure: -162.5 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(29): One or more layers of insulation adhered with approved adhesive

All General and System Limitations apply.

Vapor Retarder (Optional):	Hot-applied:	Optional hot asphalt-applied base and/or ply sheets approved for use with roof cover followed by an additional asphalt-applied sheet.
	Self-Adhered:	Optional self-adhered base membrane approved for use with roof cover followed by an additional self-adhered sheet
	Torch-applied:	Optional hot asphalt-applied base and/or ply sheets or optional torch-applied base membrane approved for use with roof cover followed by an additional torch-applied sheet

(Optional) Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II, Multi-Max FA-3, H-Shield, ENRGY 3, Sarnatherm		
Minimum: 1.5" thick	N/A	N/A

Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
Structodek High Density Fiberboard		
Minimum: 0.5" thick	N/A	N/A

Note: All insulation shall be adhered to the deck or vapor barrier in TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in continuous 3-inch ribbons spaced 12" o.c. Refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee.

Maximum Design Pressure: -162.5 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank

System Type A(30): One or more layers of insulation fully adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of the following:

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II Minimum 1.3" thick or tapered	N/A	N/A
Sarnatherm, ENRGY-3, ENRGY-3 Plus, ENRGY 3 PSI-25, H-Shield Minimum 1.4" thick or tapered	N/A	N/A
H-Shield-WF Minimum 1.9" thick or tapered	N/A	N/A
Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime Minimum ¼" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Membrane: Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure: -202.5 psf. (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(31): One or more layers of insulation adhered with approved adhesive, membrane fully adhered

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved asphaltic vapor retarder may be installed over the deck or the base layer of insulation

One or more layers of the following insulations:

Base Insulation Layer	Fastener Type	Fastener Density/ft^2
Approved EPS Insulation Boards		
Minimum 1.5" thick	N/A	N/A
Approved XPS Insulation Boards		
Minimum 1.0" thick	N/A	N/A

Top Insulation Layer	Fastener Type	Fastener Density/ft^2
DensDeck, DensDeck Prime		
Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Millennium Pourable Foam Insulation Adhesive or Sarnacol 2164. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Membrane: Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure: -202.5 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank

System Type A(32): One or more layers of insulation fully adhered with approved asphalt.

All General and System Limitations apply.

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
ACFoam II Minimum 1.3" thick or tapered	N/A	N/A
H-Shield (Requires top layer of approved insulation) Minimum 1.3" thick or tapered	N/A	N/A
(Optional) Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime Minimum ¼" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Membrane: Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure: -210 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank

System Type A(33): One or more layers of insulation fully adhered with approved asphalt.

All General and System Limitations apply.

Base Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
Sarnatherm, ENRGY 3, ENRGY-3 Plus, ENRGY 3 PSI-25, H-Shield		
Minimum 1.4" thick or tapered	N/A	N/A
Multi-Max FA-3		
Minimum 1.5" thick or tapered	N/A	N/A
H-Shield-WF		
Minimum 1.9" thick or tapered	N/A	N/A
(Optional) Top Insulation Layer	**Fastener Type**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime		
Minimum ¼" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20 -40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Membrane: Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 adhesive applied at 2.25 gal/sq. to the insulation using a ¼" x ¼" notched squeegee or Sarnacol 2170 adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 1.0 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure: -225 psf. (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank

System Type B(1): Base Layer of insulation mechanically attached, optional top insulation layer fully adhered with approved asphalt.

All General and System Limitations apply:

Vapor Retarder: (Optional) Any UL or FM approved vapor barrier approved for use with hot asphalt may be applied to the deck or perlite base layer.

Barrier: (Optional) Minimum ¼ " Type X Gypsum or DensDeck

Base Insulation Layer	**Fastener Density/ft^2**	**Fastener Type**
ACFoam II, ACFoam Composite (bottom layer only), H-Shield		
Minimum 1.3" thick or tapered	1:2	Any approved fastener listed in
Minimum 2" thick or tapered	1:4	Table 3
ENRGY 3, ENRGY-3 Plus, ENRGY 3 PSI-25, Sarnatherm, Sarnatherm-25 PSI		
Minimum 1.4" thick or tapered	1:3	Any approved fastener listed in
Minimum 2" thick or tapered	1:4	Table 3
DensDeck, DensDeck Prime		
Minimum ¼" thick	1:1.2	Any approved fastener listed in
Minimum ½" thick	1:1.7	Table 3
Multi-Max FA-3, Thermaroof Composite-3 (bottom layer only)		
Minimum 1.25" thick or tapered	1:2	Any approved fastener listed in
Minimum 2" thick or tapered	1:4	Table 3
Approved High Density Wood Fiber (top layer only)		
Minimum 1.4" thick	1:2	Any approved fastener listed in
Minimum 1" thick	1:2	Table 3

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

(Optional) Top Insulation Layer	**Fastener Density/ft^2**	**Fastener Type**
ACFoam II		
Minimum 1.3" thick or tapered	N/A	N/A

(Optional) Top Insulation Layer (continued)	Fastener Density/ft^2	Fastener Type
ENRGY-3, ENRGY-3 Plus, ENRGY 3 PSI-25, Sarnatherm, Sarnatherm-25 PSI		
Minimum 1.4" thick or tapered	N/A	N/A
DensDeck, DensDeck Prime		
Minimum ¼" thick	N/A	N/A
Multi-Max FA-3		
Minimum 1.25" thick or tapered	N/A	N/A
Approved High Density Wood Fiber		
Minimum 1" thick	N/A	N/A

Note: Optional top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and .5 gal/sq. to the back of the Membrane, or Sarnacol 2121 applied to the substrate only at 1.5 to 2.5 gal./sq.

Maximum Design Pressure: -45 psf. (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank

System Type B(2): Base Layer of insulation mechanically attached, optional top insulation layer adhered with approved adhesive.

All General and System Limitations apply:

Vapor Retarder: (Optional) Any UL or FM approved vapor barrier approved for use with hot asphalt may be applied to the deck or perlite base layer.

Base Insulation Layer	**Fastener Density/ft^2**	**Fastener Type**
ACFoam Supreme, H-Shield, Sarnatherm or H-Shield CG		
Minimum 1.5" thick	1:4	Any approved fastener listed in Table 3

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

(Optional) Top Insulation Layer	**Fastener Density/ft^2**	**Fastener Type**
ACFoam Supreme, H-Shield, Sarnatherm or H-Shield CG		
Minimum 1.5" thick	N/A	N/A
DensDeck Prime, DensDeck DuraGuard		
Minimum ¼" thick	N/A	N/A

Note: Optional top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 25 lbs/sq. or 0.75" wide beads of OlyBond 500 spaced 12" o.c.

Membrane: Sarnafil G410 PS, self-adhered to insulation and installed with a 3" wide heat welded seam. Membrane is rolled into insulation with a weighted roller.

Maximum Design Pressure: -45 psf. (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank

System Type C(1): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

Vapor Retarder: (Optional) Any UL or FM approved vapor barrier approved for use with hot asphalt may be applied to the deck or perlite base layer.

Barrier: (Optional) Minimum ¼ " Type X Gypsum or DensDeck

Base Insulation Layer	**Fastener Density/ft^2**	**Fastener Type**
ACFoam II, ACFoam III, ACFoam Composite, ACFoam Supreme, H-Shield		
Minimum 1.3" thick or tapered	N/A	N/A
Sarnatherm, Sarnatherm-25 PSI, ENRGY-3, ENRGY-3 Plus, ENRGY 3 PSI-25, ISO 95+ GL		
Minimum 1.4" thick or tapered	N/A	N/A
Multi-Max FA-3, Thermaroof-3		
Minimum 1.25" thick or tapered	N/A	N/A
DensDeck, DensDeck Prime		
Minimum ¼" thick	N/A	N/A

Top Insulation Layer	**Fastener Density/ft^2**	**Fastener Type**
ACFoam II,		
Minimum 1.3" thick or tapered	1:2	Any approved fastener listed
Minimum 2" thick or tapered	1:4	in Table 3
Sarnatherm, Sarnatherm-25 PSI, ENRGY-3, ENRGY-3 Plus, ENRGY 3 PSI-25		
Minimum 1.4" thick or tapered	1:3	Any approved fastener listed
Minimum 2" thick or tapered	1:4	in Table 3
DensDeck, DensDeck Prime		
Minimum ¼" thick	1:1.2	Any approved fastener listed
Minimum ½" thick	1:1.7	in Table 3
Approved High Density Wood Fiber (base layer only)		Any approved fastener listed
Minimum 1" thick	1:2	in Table 3

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substrate and .5 gal/sq. to the back of the Membrane, or Sarnacol 2121 applied to the substrate only at 1.5 to 2.5 gal./sq.

Maximum Design Pressure: -45 psf. (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 2I: Concrete, Insulated

Deck Description: Minimum 2500 psi concrete or concrete plank

System Type C(2): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

Barrier: None.

Base Insulation Layer	**Fastener Density/ft^2**	**Fastener Type**
Any approved polyisocyanurate listed in Table 2		
Minimum 1.5" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	**Fastener Density/ft^2**	**Fastener Type**
DensDeck Prime		
Minimum 5/8" thick	1:2	8 with 10

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: Sarnafil G410 Felt or S327 Felt, adhered with Sarnacol 2121 adhesive applied at a rate of 2.0 – 2.5 gal/sq to substrate. Minimum 3" wide side lap is sealed with a 1.5" wide heat weld.

Maximum Design Pressures: -52.5 psf. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 2I: Concrete, Insulated

Deck Description: Minimum 2500 psi concrete or concrete plank

System Type C(3): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

Barrier: None.

Base Insulation Layer	**Fastener Density/ft^2**	**Fastener Type**
Any approved polyisocyanurate listed in Table 2		
Minimum 1.5" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	**Fastener Density/ft^2**	**Fastener Type**
DensDeck Prime		
Minimum 5/8" thick	1:2	8 with 10

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: Sarnafil G410 or S327, adhered with Sarnacol 2170 applied at a rate of 0.75 – 2 gal/sq. to the substrate and 0.5 gal/sq. to the back of the membrane. Minimum 3" wide side lap is sealed with a 1.5" wide heat weld.

Maximum Design Pressures: -60.0 psf. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi concrete or concrete plank

System Type D(1): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

Vapor Retarders: (Optional) a FM approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" Type X Gypsum or 1/4" DensDeck secured with Miami-Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

One or more layers of any approved insulation listed in Table 2.

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

Membrane: Minimum 45 mil thick Sarnafil S327 or Sikaplan 45 attached to deck as specified below.

Sarnafastener-XP fasteners and Sarnadisc XPN plates spaced 6" o.c. within 5.5" wide side laps spaced maximum 114.5" o.c. Laps are sealed with a minimum 0.5" wide outside edge heat weld.

Maximum Design Pressures: -45.0 psf. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi concrete or concrete plank

System Type D(2): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

Vapor Retarders: (Optional) a FM approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" Type X Gypsum or 1/4" DensDeck secured with Miami-Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

One or more layers of any approved insulation listed in Table 2.

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

Membrane: Minimum 45 mil thick Sarnafil S327, S327 Felt or Sikaplan 45 attached to deck as specified below with Sarnarail Polymer Batten Strips.

Fastening #1: Sarnafastener-XP fasteners spaced 12" o.c. through batten strip spaced maximum 73.25" o.c. within the 5.5" wide side lap. Batten strip splice joints are made by overlapping the batten 18" and securing with two Sarnafastener XP screws spaced 12" o.c. Laps are sealed with at 1.5" wide heat weld on the outside edge and 1.0" wide heat weld on the inside edge.

Maximum Design Pressure -45.0 psf. (See General Limitation #7)

Fastening #2: Sarnafastener-XP fasteners spaced 6" o.c. through batten strip spaced maximum 144" o.c. within the 5.5" wide side lap. Batten strip splice joints are made by overlapping the batten 12" and securing with two Sarnafastener XP screws spaced 6" o.c. Laps are sealed with at 1.5" wide heat weld on the outside edge and 1.0" wide heat weld on the inside edge.

Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #3: Sarnafastener-XP fasteners spaced 6" o.c. through batten strip spaced maximum 73.25" o.c. within the 5.5" wide side lap. Batten strip splice joints are made by overlapping the batten 12" and securing with two Sarnafastener XP screws spaced 6" o.c. Laps are sealed with at 1.5" wide heat weld on the outside edge and 1.0" wide heat weld on the inside edge.

Maximum Design Pressure -75.0 psf. (See General Limitation #7)

Maximum Design Pressures: See Fastening Pattern. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi concrete or concrete plank

System Type D(3): Membrane attached over preliminary fastened insulation.

The following assembly is approved to a maximum design pressure listed with specific fastening patterns. No substitutions shall be made. All General and System Limitations apply.

All General and System Limitations apply.

Vapor Retarders: (Optional) a FM approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" Type X Gypsum or ¼ " DensDeck

One or more of the following.

Base Insulation Layer	**Fastener Density/ft^2**	**Fastener Type**
ACFoam II, ACFoam III, ACFoam Composite (bottom layer only), ACFoam Supreme, H-Shield		
Minimum 1.3" thick or tapered	N/A	N/A
Sarnatherm, Sarnatherm-25 PSI, ENRGY-3, ENRGY-3 Plus, ENRGY 3 PSI-25, ISO 95+ GL		
Minimum 1.4" thick or tapered	N/A	N/A
Approved High Density Wood Fiberboard (base layer only)		
Minimum 1" thick or tapered	N/A	N/A
Multi-Max FA-3, Thermaroof-3		
Minimum 1.25" thick or tapered	N/A	N/A
DensDeck, DensDeck Prime		
Minimum ¼" thick	N/A	N/A
Approved Perlite (base layer only)		
Minimum ¾" thick	N/A	N/A

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

Membrane:	Sarnafil S327, S327 Felt or Sikaplan 45 attached to deck as specified below.
Fastening #1:	Sarnafastener-XP screws and plates spaced 12 in. o.c. within 5.5 in. wide side laps. Laps spaced 73 in. o.c. and sealed with a 1.5 in. wide heat weld. ***Maximum Design Pressure -45 psf. (See General Limitations # 7)***
Fastening # 2:	Sarnafastener-XP screws with 2" Sarnadisc- plates spaced 12 in. o.c. within 6 in. wide side laps. Laps spaced 72.5 in. and sealed with a 0.75 in. wide heat weld on the inside and a 1.5 in. heat weld on the outside. ***Maximum Design Pressure -45 psf. (See General Limitations # 7)***
Fastening #3:	Sarnafastener-XP screws and plates spaced 6 in. o.c. within 5.5 in. wide side laps. Laps spaced 73.5 in. o.c. and sealed with a 1.5 in. wide heat weld. ***Maximum Design Pressure -75 psf. (See General Limitations # 7)***
Fastening #4:	Sarnafastener-XP screws with 2" Sarnadisc plates spaced 6 in. o.c. within the 6 in. wide side laps. Laps spaced 72.5 in. and sealed with a 0.75 in. wide heat weld on the inside and a 1.5 in. heat weld on the outside. ***Maximum Design Pressure -82.5 psf. (See General Limitations # 7)***
Fastening # 5:	Sarnabars spaced 3' o.c. maximum fastened with Sarnafasteners-XP spaced 6 in. o.c. through the field of the membrane and covered with a 7" minimum width cover strip with 1.5" welds on each side. ***Maximum Design Pressure -112.5 psf. (See General Limitations # 7)***
Maximum Design Pressures:	See Fastening Pattern. (See General Limitations # 7)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank

System Type D(4): Membrane mechanically attached over preliminary fastened insulation.

All General and System Limitations apply.

Vapor Retarder: (Optional) Any UL or FM approved vapor barrier approved for use with hot asphalt may be applied to the deck or perlite base layer.

Barrier: (Optional) Minimum ¼ " Type X Gypsum or DensDeck

Base Insulation Layer	Fastener Density/ft^2	Fastener Type
ACFoam II, ACFoam III, ACFoam Composite (bottom layer only), ACFoam Supreme, H-Shield		
Minimum 1.3" thick or tapered	N/A	N/A
Sarnatherm, Sarnatherm-25 PSI, ENRGY-3, ENRGY-3 Plus, ENRGY 3 PSI-25, ISO 95+ GL		
Minimum 1.4" thick or tapered	N/A	N/A
Approved High Density Wood Fiberboard, or tapered (base layer only)		
Minimum 1" thick	N/A	N/A
Multi-Max FA-3, Thermaroof-3		
Minimum 1.25" thick or tapered	N/A	N/A
DensDeck, DensDeck Prime		
Minimum ¼"" thick	N/A	N/A

Note: All insulation shall have preliminary attachment prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft. and four fasteners for any insulation board having no dimension greater than 8 ft.

Membrane: Sarnafil S327, S327 Felt Back or Sikaplan 45 attached to deck as specified below.

Fastening #1: Sarnafastener-Concrete fasteners with 2" Sarnadisc spaced maximum 12" o.c. within the minimum 6 inch wide side laps. Laps spaced maximum 72.5 inches apart and sealed with minimum 1.5 inches wide heat weld.
Maximum Design Pressure: -45 psf. (See General Limitation #7)

Fastening #2: Sarnafasteners, with approved discs spaced 6" o.c. within the minimum 5.5" side lap spaced maximum 73" o.c. and sealed a minimum 1.5" weld on each side of the sheet.
Maximum Design Pressure: -52.5 psf. (See General Limitation #7)

Fastening #3: Sarnafastener with approved discs spaced 6" o.c. in rows 12' o.c. maximum, or Sarnabars spaced 12' o.c. maximum fastened with Sarnafastener spaced 6" o.c. through the field of the membrane and covered with a 7" minimum width cover strip with minimum 1.5" welds on each side of the sheet**.**
Maximum Design Pressure: -52.5 psf. (See General Limitation #7)

Fastening #4: Sarnafastener-Concrete fasteners with approved plates spaced maximum 6 inches o.c. within the minimum 5.5 inches wide side laps. Laps spaced maximum 73.5 inches apart and sealed with minimum 1.5 wide heat weld.
Maximum Design Pressure: -75 psf. (See General Limitation #7)

Fastening #5: Sarnafastener-Concrete fasteners with 2" Sarnadisc spaced maximum 6" o.c. within the minimum 6 inch wide side laps. Laps spaced maximum 72.5 inches apart and sealed with minimum 0.5 inches wide heat weld.
Maximum Design Pressure: -82.5 psf. (See General Limitation #7)

Fastening #6: Sarnabar spaced maximum 4.5 ft. o.c. secured to deck with Sarnafastener-Concrete, OMG Heavy Duty, or OMG CD-10 fasteners spaced maximum 12 " o.c.
Maximum Design Pressure: -120 psf. (See General Limitation #7)

Fastening #7: Sarnabar spaced maximum 4.5 ft. o.c. secured to deck with Sarnafastener-Concrete, OMG Heavy Duty, or OMG CD-10 fasteners spaced maximum 6 " o.c.
Maximum Design Pressure: -232.5 psf. (See General Limitation #7)

Maximum Design Pressure: See Above for fastening

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi concrete or concrete plank

System Type D(5): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

Vapor Retarders: (Optional) a FM approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" Type X Gypsum, 1/4" DensDeck secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

One or more layers of any approved insulation listed in Table 2.

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

Membrane: Sarnafil S327, S327 Felt or Sikaplan 45 attached to deck as specified below with Sarnarail Polymer Batten Strips spaced at 114.5" o.c. within a 5.5" wide lap.

Sarnafastener-XP fasteners spaced 6" o.c. through batten strip. Batten strip is lapped 8" and sealed with a 1.25" wide heat weld on outside edge and a 0.75" wide heat weld on inside edge.

Maximum Design Pressures: -52.5 psf. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 2I: Concrete, Insulated

Deck Description: Minimum 2500 psi concrete or concrete plank

System Type D(6): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

Vapor Retarders: (Optional) a FM approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" Type X Gypsum, 1/4" DensDeck secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

One or more layers of any approved insulation listed in Table 2.

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

Membrane: Minimum 45 mil thick Sarnafil S327, S327 Felt or Sikaplan 45 attached to deck as specified below.

Fastening #1: Sarnafastener-XP fasteners and Sarnarail Polymer Batten Strip spaced 12" o.c. within 5.5" wide side laps spaced maximum 54" o.c. Laps are sealed with a minimum 1" wide outside heat weld and a minimum 5/8" wide inside heat weld.

Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #2: Sarnafastener-XP fasteners and Sarnadisc XPN plates spaced 12" o.c. within 5.5" wide side laps spaced maximum 54" o.c. Laps are sealed with a minimum 1.6" wide outside heat weld.

Maximum Design Pressure -60.0 psf. (See General Limitation #7)

Fastening #3: Sarnafastener-XP fasteners and Sarnadisc XPN plates spaced 6" o.c. within 5.5" wide side laps spaced maximum 54" o.c. Laps are sealed with a minimum 1.6" wide outside heat weld.

Maximum Design Pressure -90.0 psf. (See General Limitation #7)

Maximum Design Pressures: See Fastening Pattern. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Minimum 2500 psi concrete or concrete plank

System Type D(7): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

Vapor Retarders: (Optional) a FM approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" Type X Gypsum, 1/4" DensDeck secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

One or more layers of any approved insulation listed in Table 2.

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

Membrane: Sarnafil S327, S327 Felt or Sikaplan 45 attached to deck as specified below.

Sarnafastener-XP fasteners and Sarnadisc-XPN plates spaced 6" o.c. within 5.5" wide laps spaced 114.5" o.c. Laps are sealed with a 1.75" wide heat weld on outside edge of lap.

Maximum Design Pressures: -60.0 psf. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 2I: Concrete, Insulated

Deck Description: Minimum 2500 psi concrete or concrete plank

System Type D(8): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

Vapor Retarders: (Optional) a FM approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" Type X Gypsum, 1/4" DensDeck secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

One or more layers of any approved insulation listed in Table 2.

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

Membrane: Minimum 48 mil thick Sarnafil S327, S327 Felt or Sikaplan 45 attached to deck as specified below with Sarnarail Polymer Batten Strips.

Sarnafastener-XP fasteners spaced 6" o.c. through batten strip spaced maximum 144" o.c. within the 5.5" wide side lap. Batten strip splice joints are made by overlapping the batten 12" and securing with two Sarnafastener XP screws spaced 6" o.c. Laps are sealed with at 1.5" wide heat weld on the outside edge and 1.0" wide heat weld on the inside edge.

Maximum Design Pressures: -60.0 psf. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type D(9): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

Vapor Retarders: (Optional) a FM approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" Type X Gypsum, 1/4" DensDeck secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

One or more layers of any approved insulation listed in Table 2.

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

Membrane: Minimum 45 mil thick Sarnafil S327 or Sikaplan 45 attached to deck as specified below.

Sarnafastener-XP fasteners or OMG Large Head #15 Roofgrip fasteners and ¾" wide Sarnarail Polymer Batten Strip spaced 6" o.c. within 5.5" wide side laps spaced maximum 114.5" o.c. Batten Strip is lapped 8" within lap to provide a minimum 2 screw securement in lap. Laps are sealed with a minimum 1.25" wide outside edge heat weld and minimum 0.75" wide inside edge heat weld.

Maximum Design Pressures: -60.0 psf. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3: Concrete, Non-Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank.

System Type F(1): Membrane fully adhered to deck.

All General and System Limitations apply.

Barrier: None

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2170 applied to the substrate at 2 to 2.5 gal./sq.

Maximum Design Pressure: -391.5 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3: Concrete, Non-Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank.

System Type F2): Membrane fully adhered to deck.

All General and System Limitations apply.

Barrier: None

Membrane: Sarnafil G410, G410 Felt, S327 or S327 Felt adhered with Sarnacol 2121 applied to the substrate at 2 to 2.5 gal./sq.

Maximum Design Pressure: -487.5 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3: Concrete, Non-Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank.

System Type F(3): Membrane fully adhered to deck

All General and System Limitations apply.

Barrier: None

Membrane: Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2170 roller applied to the substrate at 1.0 gal./sq. Then followed by second coat of 2170 roller applied at 1.0 gal/sq. Roof cover immediately place into adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure: -547.5 psf (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 3: Concrete, Non-Insulated

Deck Description: Minimum 2500 psi structural concrete or concrete plank.

System Type F(4): Membrane fully adhered to deck.

All General and System Limitations apply.

Barrier: None

Membrane: Sarnafil G410 Felt or S327 Felt adhered with Sarnacol 2121 squeegee applied to the substrate at 2 to 2.5 gal./sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

Maximum Design Pressure: -615 psf (See General Limitation #9)

CONCRETE DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117 and/or RAS 137, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance; refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. Insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117 and/or RAS 137. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9N-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE